NASA Range Safety Program
2006 Annual Report

DEVELOPMENT, IMPLEMENTATION, SUPPORT OF RANGE SAFETY POLICY
RANGE SAFETY LAUNCH SUPPORT POLICY

On 19 January 2006, NASA Range Safety supported a NASA launch (Pluto New Horizons) at the Eastern Range's Range Operations Control Center at Cape Canaveral Air Force Station. This was the first time NASA Range Safety supported a launch other than the Space Shuttle. This historic effort took many months of planning and negotiations between all parties to determine the appropriate amount of involvement, not to mention the coordination of resources required to support two additional console positions in the Mission Control Room at the Range Operations Control Center.

A New Way of Operating

Through agreements between NASA, the 45th Space Wing, and the 30th Space Wing, NASA Range Safety provides operational support to relay range safety information to NASA launch team managers, as well as ensuring NASA Procedural Requirements (NPR 8715.5) are met during pre-launch, launch, and post-launch operations. Currently, there is a Memorandum of Agreement between the 45th Space Wing, NASA/Kennedy Space Center, and the Space Shuttle Program that outlines the procedures for NASA Range Safety Support. We recently completed a draft Memorandum of Agreement with the 30th Space Wing Safety Office to formalize support at the Western Range.

This new way of operating bridges some of the gaps from the past. The processes allow for direct communications with the Air Force Commander's Advisory Board, Safety Advisors, and Mission Flight Control Officers on matters of range safety, such as flight safety systems, flight safety analysis, tracking and instrumentation outages and limitations, as well as user vehicle anomalies. With timely and more concise information, a launch abort or scrub may be avoided, saving time and money. However, the most important aspect of this cooperative effort is the fact that this type of partnership is the most practical and effective way to do business when it comes to ensuring public safety.

Challenges

Several challenges were associated with such a bold new approach. Providing console space in the respective range operations centers was one of the major hurdles of the new operations. This meant that Operations Directives that list range support requirements had to be updated to include the new NASA Range Safety positions. Furthermore, communication support plans and entry authorizations needed to be updated and approved to ensure full inclusion into the range safety process. It was vital that NASA Range Safety personnel have the capability to communicate with both the Air Force and NASA team on safety issues quickly and accurately.

Additionally, a process for receiving Air Force generated launch documentation to support launch activities needed to be in place. NASA Range Safety requested the same documents used by the Mission Flight Control Officers and Safety Technical Advisors. To ensure NASA Range Safety was in lock-step with the Range, it was determined that waivers and variances, the Launch Support Plan (Range Countdown Checklist), Mission Flight Control Officer Countdown Checklist, Estimated Coverage Plan for instrumentation, Flight Control Instrumentation Worksheet, Range Safety Operations Requirements and Supplements, and general and special Mission Rules as well as other

documentation would be provided to ensure everyone was working from the same page for an orderly flow of events and discussions during the countdown.

Other processes were needed to ensure that NASA Range Safety personnel were included and advised of meetings, readiness reviews, and integrated crew exercises tied into pre-launch processes. Since the Program Support Managers are the Range focal point for launch support meetings as well as the liaison between the Range and the vehicle provider, they have proven invaluable in providing this information to NASA Range Safety.

Benefits

This cooperative effort was further demonstrated when NASA Range Safety supported two launches (Pegasus/ST-5 and Delta II/CloudSat-CALIPSO) at Vandenberg Air Force Base, California and STEREO mission launched from Cape Canaveral Air Force Station. To date this effort has paid many benefits, specifically opening the lines of communications and cooperation between NASA, the Air Force, and the Range User to new levels. With this solid foundation, our collective processes continue to evolve as we work together to ensure public safety.